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NEOLITHIC LIFE IN DEVON AND CORNWALL.

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DURING the last few years much useful work has been done by certain members of the Devonshire Association and of the Royal Institution of Cornwall in surveying and exploring the prehistoric monuments which, though sadly reduced in number, still abound on Dartmoor and in various parts of Cornwall. Admirably illustrated reports of the work done have been published in the Journals of the two societies, but, as these are not very largely circulated outside the two south-western counties, there may be many readers of 'The Zoologist' to whom a brief account of the results obtained may not be unwelcome.

Visitors to the central parts of Dartmoor will remember the various remains which they have met with there—long "rows" or lines of stones, sometimes single, sometimes double—stones standing or lying in circles, sometimes in connection with the "rows," but more frequently not—single stones or menhirs—and rude enclosures formed by low walls of smaller stones without mortar, sometimes large, sometimes small, sometimes singly, sometimes in groups, with or without a similar wall enclosing the group. The smaller of these are called "hut-circles," the larger ones "pounds"; they are the remains of prehistoric dwellings, and it is in them that the most interesting discoveries have been made.

The most generally known collection of hut-circles, and the first to be explored, is that at "Grimspound," near Moreton Hampstead. "Grimspound" is an irregularly shaped piece of ground, lying between two tors, with a small streamlet running through it, and enclosed by an unmortared stone wall, more than fifteen hundred feet in circumference. This was originally about five feet high and nine or ten thick, but, in some places at least, it seems to have been divided into two walls with a space between them; this space may have been filled up with turf, or it may have been used for dwelling or storage purposes. Inside this enclosure are the foundations of about two dozen roughly circular enclosures, from nine to sixteen feet in diameter, some of which were probably cattle pens, while others were certainly human dwellings. The latter had originally consisted of slabs of granite set up in a ring to a height of about three feet, the spaces between being filled in with smaller stones, and the whole backed up outside with turf; the doors were generally constructed of two upright jambs of granite between two and three feet high, on the top of which lintels of granite were placed; the floors of the huts were of the subsoil of clay and granite grit and rolled pebbles, beaten hard, and occasionally, and in places, paved; the roof is believed to have been formed by poles sloping from the top of the low wall to the centre, and covered with turf, rushes, &c., as there were not sufficient stones found to form a domed roof. Most of the huts, when cleared of the accumulation of vegetable soil with which they were filled, were found to contain a low platform or dais, formed of curbstones with straight edges, all natural, but selected for the purpose, and laid in the soil, cutting off a portion of the circumference, which portion was generally carried out so as to afford additional width and depth to the dais, which was usually paved, and probably served as a seat for the inhabitants by day and as a bed at night. There were generally a flat stone in the middle of the hut, without any indication of fire upon it, which had probably been used as a table, or as a base for a post to support the conical roof, and another flat stone, with considerable marks of fire, which had evidently been a hearthstone; near the latter was usually found a hole in the floor, about nine inches deep, lined with stones set on edge, and full of peat ashes and charcoal, which was doubtless



used as a cooking hole, into which, after it had been thoroughly heated, meat was put with hot pebbles and covered over until it was sufficiently baked. One small piece of pottery, a flint knife, and two flint scrapers, are all the articles of human workmanship found in the twenty circles cleared at Grimspound.

Other collections of circles have, however, been explored in different parts of Dartmoor which, while their general characteristics were very similar, have supplied some further remains of the handiwork of their former occupants. Several flint knives, scrapers and flakes, hones, rubbers, and mullers, one stone with a hole bored nearly through it, a spindle whorl of baked clay (a most important indication of the comparative civilization of the inhabitants), and some very rude pottery, are the produce of later excavations.

At Legis Tor, where a very interesting collection of eleven huts was thoroughly excavated only last year, an urn, ten inches in diameter and twelve deep, was found set in the ground in place of a cooking hole; its bottom had been broken by use, and mended anciently with a lump of china clay, without its being removed; two cooking stones and some earth and ashes were found in it, but there were no ashes round the outside; fragments of urns were also found in the cooking holes of the other huts at this place, several of which were rudely ornamented, but all were of very poor construction.

Up to the end of last season seventy-nine huts which showed signs of human occupancy had been explored in various parts of Dartmoor, of which thirty-seven have yielded tools, flakes, and cores of flint; twenty-six have shown remains of pottery; thirty had cooking holes, some of which contained round-bottomed vessels of coarse pottery, red outside and black within; twelve have produced rubbing stones, and nearly all have contained cooking stones.

The long steep hill of Carnbrê, near Redruth, with its mediæval tower at one end, and the Dunstanville monument at the other end, is well known to all visitors to western Cornwall. Here Dr. Borlase wandered and found various Druidic remains which I entirely failed to identify when I visited the spot in 1869, but both he and I were ignorant of what was really there beneath our feet. It had long been known that there were a few

hut circles, and the remains of walls for the protection of the hill; but, when Mr. Thurstan Peter undertook the excavation of the circles in 1895, it was his young daughter who induced him to extend his researches to the spaces between the naturally placed boulders near the circles, with the result that some of them also were found to have been roofed in and used as dwellings. The circular huts appear to have been of the same type as those at Grimspound, but larger, the diameter of one being as much as twenty-six feet; some of them had hearths and cooking holes like those on Dartmoor, but there were no raised platforms. A few broken spindle whorls, some fragments of pottery of a better kind than that found on Dartmoor, some stone mullers and rubbers, a polished celt, some flint spearheads, knives, flakes, and cores, and about five hundred flint arrowheads of all shapes,—thirty of them in faultless condition and of most beautiful workmanship,—were the reward of the exploration of nearly one hundred hut-circles and inter-boulder dwellings.

The fact that so many arrowheads and several spearheads have been found at Carnbrê, while none have been found at Grimspound, and not many on Dartmoor at all, has been held to indicate that the Cornishmen were a warlike people, either from choice or necessity, while those of Dartmoor were more peaceful and pastoral; and it has also been pointed out that Grimspound is commanded from higher ground on three sides, and is rather a protected village or cattle station than a fortress like Carnbrê. Seeing, however, that arrows are useful for hunting as well as for fighting, it may be questioned whether this difference (should it be sustained by future explorations) may not be due to racial or tribal peculiarities, or may not rather show that Grimspound belongs to a somewhat earlier period than Carnbrê; and this view may be supported by a reference to the great quantity of "stone rows" on Dartmoor, the like of which cannot be found in Cornwall or anywhere else. The existence of flint weapons in Cornwall opens up an interesting question, for there is little, if any, flint in the county suitable for them. In the wildest part of it, between the Cheesewring and Brown Willy, is a piece of water, called Dozmaie Pool, from the peat on the banks of which great numbers of beautiful flakes have been obtained, but the

raw material was brought from a part of Devonshire thirty miles away, to be worked up at this place. Mr. Francis Brent, F.S.A., of Plymouth, has collected much valuable information about flint stations in Cornwall, but has unfortunately not yet published it.

On the slopes of Brown Willy and Rough Tor, which are the highest points of Cornwall, there are numerous hut-circles and enclosures which have not yet been explored; some of these are smaller than those of Dartmoor and Carnbrê, and were covered with roofs of stone and turf built up in the same way as the walls; one of them is still perfect, and at least one other has part of the roof remaining. There also are five circles of standing stones, the diameters of which, as I have pointed out elsewhere,* seem to have been carefully measured, as indeed do the distances between the circles themselves; their positions also appear to have been carefully selected, so as to bring them into certain lines with the tops of the surrounding hills. All these things point to an observance of the sun and stars for religious or astronomical purposes, or both, and to some amount of communication, casual it may be rather than regular, with the East, which we should hardly expect to find in conjunction with such rude dwellings and appliances of living as the excavations already described show to have belonged to the people by whom the circles were almost certainly erected. But it must be borne in mind that rough ways of living are by no means incompatible with high intellectual capacity, and that the habitations of parts of Ireland and Scotland in which many of our most useful public men have first seen the light have not been very superior to those of Carnbrê or Dartmoor. Another reflection arising from this is that the dwellings in Ireland and elsewhere which strike visitors from England as being so extremely uncivilized, are not the result of degradation of the inhabitants, but rather of their not having advanced in that particular much beyond the fashions of their ancestors of two or three thousand years ago.

There are circles of standing stones on Dartmoor, some of which seem to have been arranged in relation to some of the surrounding hills, or to single stones standing near, and which were almost certainly constructed by the people who lived in the

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hut circles. Many there are who hold that these circles were places of burial and nothing more; interments have been found in some (just as they may be found in some churches), but not in all of them, and the absence of interments in some shows that burial was not, as a rule, their primary object. Others consider the circles of standing stones to be merely the remains of the circular walls of large stone towers, but that idea hardly requires serious notice. On Dartmoor there are also numerous long rows of small standing stones, which frequently have a small circle, with or without a barrow inside it, at one end of the line, or it may be a barrow without a circle. One of these lines is nearly two miles long, and extends from one of the "sacred" circles to a barrow, which was no doubt a tomb. Nothing really like these stone rows is found anywhere but on Dartmoor, and what the idea underlying their construction was is most uncertain. If, when they were erected, the fogs on Dartmoor were as frequent as they are now, the "rows" might have helped the inhabitants to find their way about; but there was most likely some more occult reason for their construction than that. About forty of these rows are still left on different parts of Dartmoor.

The ancient population of the moors, which was apparently more numerous than that of the present day, must have left considerable quantities of refuse in the shape of bones, which, if they could be found, would enable zoologists to tell us what animals and birds they reared, or hunted, and lived upon; and amongst the bone and shell-heaps might be found further fragments of tools, weapons, and pottery, which would also add to our information about their manners and customs, but their "kitchen-middens" have yet to be discovered and reported upon.

The tombs of the hut-dwellers have for the most part been broken into and their contents scattered long ago, so that we know little about their physical characteristics. They are generally supposed to have been a small dark-haired race, and the size of some of their dwellings, and particularly the dimensions of the entrances to them, seem to favour that view; but, although we are not so well informed upon these points as we could wish, the excavations recently made enable us to form a fair idea of their manner of life. We can imagine the women

spinning, cooking in the holes by the hearths, and preparing the skins of the animals killed in the chase by the men, and making garments from them; while around them the children, who probably wore no clothes at all in hot weather, played at rude games, or imitated the more serious pursuits of their parents. We can picture to ourselves the men hunting, fishing, tending their cattle, and perhaps engaging in some rudimentary agricultural employment, or manufacturing flint tools and weapons from the lumps of flint which in Cornwall were obtained from the north-east, either by parties organized from their own villages, or from caravans of traders from beyond the Tamar. We may even suppose a priesthood supervising the erection of the sacred circles, and carrying on some sort of ceremonies therein, or taking part in funereal rites, and in the construction of barrows with long lines of stones stretching away across the country from them; and we may conclude our brief and imperfect survey of this ancient people and their remains with the reflection that the mere erection of regular circles and long lines of stones, although the stones were much smaller than those of Abury, Stonehenge, or Stanton Drew, demanded an amount of constructive skill, of careful planning, and of organized effort, actuated by some common underlying purpose or idea, which we cannot properly attribute to savages of so low a type as those by whom some other parts of the world are even yet populated; and that, poor as the manner of life of these early inhabitants of Devon and Cornwall may have been, they had yet advanced some distance beyond the first steps of civilization.

NOTES ON THE SEAL AND WHALE FISHERY, 1896.

BY THOMAS SOUTHWELL, F.Z.S.

MAN is not the only enemy the breeding Seals have to contend with, and I fear that in the past season the smaller number taken by the sealers off Newfoundland is no indication of the total mortality amongst the "whitecoats," rough weather and the consequent disruption of the ice on which they were brought forth, added to the "rafting" caused by pressure, having probably been accountable for the loss of many more young Seals than were saved from the sealers by the impassable nature of the ice. A severe gale from the N.E. about the 5th and 6th of March, before the fishery commenced, broke up a vast extent of the whelping ice, and doubtless killed or drowned a large number of young Seals; the occurrence in some localities, at the same time, of both fairly matured young ones and others newly born, indicated that some such disturbance had taken place. This same gale also drove the ice into Green Bay, and the presence upon it of a few Seals led to the impression that the main body were in that neighbourhood; this, however, did not prove to be the case, and only had the effect of misleading the vessels in their search. About March 10th, the day on which the fleet sailed, the wind changed to the westward, and very few Seals fell to the Green Bay people.

No steamer struck any large body of Seals, and great difficulty was experienced in approaching those they did secure, owing to the unusually heavy nature of the ice. There were level sheets between very heavy ice, and it was on these that the young Seals were deposited; the "patches" might be from fifteen to thirty miles apart, and unless the steamer struck and was able to reach one of these sheets of whelping ice, her success was very small indeed. The 'Newfoundland' got an early start (some say unfairly) and was fortunate in working to the back of the ice, getting a good catch of old and young Hooded Seals and a few young Harps; she struck the patch on March 13th off Cape St. John, and drifted south with them. The body of the young Harps were nearer the

shore than the Hooded Seals, and Capt. Adams, of the 'Esquimaux,' whose gunners made excellent practice, got something like 7600 old Harps and "Bedlamers" off Bonavista Bay.

Mr. Thorburn attributes the comparative failure of the fishery to the combined influence, first, of the gale on March 5th and 6th, which smashed much of the whelping ice (then very thin), drowning many young Seals and driving the heavy ice towards the shore in a compact body; and secondly, to the westerly winds accompanied by severe frost, which prevailed from March 10th to the end of that month, and forced the solid ice again off the shore, forming a barrier through which many of the steamers were unable to make headway until too late in the season for them to do much good.

Three vessels, the 'Iceland,' 'Nimrod,' and the 'Harlaw,' went to the Gulf of St. Lawrence, but did not do very well, the bulk of the northern patch of Harp Seals in that locality having, it is presumed, been driven through the Strait towards Belle Isle by the strong westerly winds; what young Harps were got by the steamers are believed to have been taken from the southern patch, which is generally found inside St. Paul's and other islands in that neighbourhood, and as the large sheets of ice on which the young are whelped do not there, as a rule, break up until late in the season, it frequently happens that they cannot be got at. (See remarks on this subject in last season's notes, p. 42.)

Twenty-two steamers in all went to the Newfoundland sealing this season, but two of them were wrecked, leaving the number twenty, as last year. Of these the most successful was the 'Neptune,' which took 22,946 Seals; followed in succession by the 'Greenland,' with 20,197; the 'Labrador,' 16,973; 'Newfoundland,' 15,900; 'Walrus,' 13,038; 'Vanguard,' 12,593; and the 'Iceland,' 11,666; the remaining thirteen vessels were all under 10,000, the total catch being 187,516 Seals (as compared with 270,058 in the previous season), and the average of the twenty vessels, 9375. In addition to these some 22,000 Seals were taken by the schooners. No second trips were made. The estimated value of the produce landed from the steamers was £55,362 (compared with £74,712 in the previous season, not £77,824 as incorrectly stated).

The result of the fishery, notwithstanding a slight increase in the value of the produce, thus shows a deficiency of £19,850. The

'Hope' had the misfortune to break her shaft, which spoiled her fishing, and the 'Vanguard' and 'Ranger' were badly nipped by the ice; the 'Wolf' was crushed by rafting ice on March 12th eight miles N.N.W. of Fogs Head; and the 'Windsor Lake' met with a similar fate on March 27th; both vessels became total wrecks, but their crews were saved.

None of the Dundee vessels went to the Greenland sealing, as the market value of produce was not sufficiently tempting; there were about seventeen Norwegian steamers out, and they are said to have done very well, but I have no statistics; they nearly all took part in the Bottle-nose fishery also, which proved very successful.

The Whale fishery has now become restricted to the port of Dundee, and the only representative of Peterhead in the Arctic Seas was the brig 'Alert,' which brought home a cargo of produce from the Cumberland Gulf station (this will be referred to further on); but Dundee sent out eight vessels, five of which—the 'Active,' 'Balæna,' 'Diana,' 'Polar Star,' and 'Terra Nova'—went to Greenland; the 'Balæna' returned clean, and the 'Diana,' which broke her shaft on May 28th, only obtained thirty-nine Bears and a few Seals; the 'Eclipse,' 'Esquimaux,' and 'Nova Zembla' went to Davis Strait.

The state of the ice in the Greenland Seas was found to be very unfavourable; it was exceedingly heavy; the weather proved mild and open, accompanied by almost incessant fog, but otherwise it was pleasant. The 'Arctic' killed her first Whale on May 13th, two others in the middle of June, and a fourth in July. The 'Polar Star' and the 'Terra Nova' had one Whale each, and several others were seen by the vessels, but could not be approached.

In Davis Strait the weather is described as the most unfavourable ever experienced by those who took part in the fishery; at the very outset of the voyage strong north-easterly gales prevailed, which blew for several weeks without ceasing, and the record of the voyage is a succession of gales and fogs. The 'Eclipse' encountered the ice very early, off Cape Desolation; and it was not until May 4th that she reached Disco, meeting with no Whales on the east side. Towards the end of May the steamer headed for the middle ice fishing-ground, where she continued to

experience the same adverse weather. After crossing Melville Bay, on June 26th, one of the few days on which the vessel was not enshrouded in fog from morning till night, she saw three Whales, one of which was captured. About this time a fearful gale was experienced from the N.E., lasting four or five days which left the ice in a hopeless condition. Under the circumstances Capt. Milne turned his attention to small game and secured, towards making up a cargo, five Narwhals, twenty-one Walruses, thirty-seven Bears, seventy-four Seals, twenty Reindeer, and three Wolves.

The 'Esquimaux' saw several Whales, but the heavy ice baffled all attempts at their capture, and the only result of her voyage was eighty Seals, twenty-one Walruses, twelve Bears, and two Narwhals.

The 'Nova Zembla' was more successful, securing two small Whales. From the station in Cumberland Gulf the brig 'Alert' brings the produce of three good Whales and 3890 Seals, consisting of 20 tons of seal and 45 tons of whale oil, and 45 cwt. of bone.

The total produce of the Whale Fishery in the past season was 12 Right and 9 White Whales, also 43 Walruses; these yielded 149 tons of oil and 135½ cwt. of bone. The oil may be valued at £18 per ton, or £2682; and the bone at £2000 per ton, or £13,525; the total being about £16,207, compared with £23,958 in the previous season.

I see it announced in the Newfoundland papers that a company is being formed at St. John's to hunt the Fin Whales in the adjacent seas from that colony, in the same way as has been so successfully practised by the Norwegians off the Finmarken coast.

I cannot close these notes without a passing tribute to the memory of my old friend Capt. David Gray, of Peterhead, of whose career I gave some particulars in my notes for 1892. After retiring from the sea, Capt. Gray was tempted to make one voyage more, and commanded the 'Windward' in 1893, the last voyage she made before her purchase for the use of the Jackson-Harmsworth Expedition. From that time he suffered greatly, bearing with characteristic bravery a painful complication of troubles arising from gout, and finally passed away at his

residence, the Links, Peterhead, on May 16th, 1896, at the age of sixty-seven years. Another well-known whaler, Capt. Alexander Fairweather, also died of brain fever, on May 31st last, off Spitzbergen, on board the 'Balæna,' which he commanded. He was one of the most successful of the Dundee whaling captains, and was chosen by Mr. Leigh Smith, in 1873, to take charge of the 'Diana,' which relieved the Nordenskjöld Expedition in Spitzbergen; afterwards he returned to the Whale fishery, and in 1892-3 took the 'Balæna' to the Antarctic Seas.

It is probable that the 'Balæna' and the 'Diana' will be withdrawn from the Whale fishery in the coming season; indeed I am informed that the difficulty of finding capable men to command these costly expeditions is very great, and that there are no young men coming forward. This, in addition to the precarious nature of the enterprise and the seeming exhaustion of the old haunts of the Whales, will probably bring about the extinction of this ancient industry, unless some new resorts of the Whales should be discovered, which seems very unlikely to happen.

As on previous occasions, I have to acknowledge my indebtedness to Mr. David Bruce and Mr. R. Kinnes, of Dundee, and to Mr. Michael Thorburn, of St. John's, Newfoundland, for their kindness in supplying me with information.

ORNITHOLOGICAL NOTES FROM THE RHINE.

BY J. H. SALTER.

HAVING spent the first nine months of the year 1896 at Bonn, and made numerous notes upon the birds of that neighbourhood, it seemed that some of the facts observed might be worth recording. The chief interest lies in the few species which one does not meet with in an ordinary way in England, and it is easy to understand why they are not more numerous when one reflects that the distance from our own shores is not greater than that from London to Edinburgh. The physical features of this part of the Rhineland are too well known to need description. The river itself, though much disturbed by traffic, affords an occasional sight of Wild Duck or Teal, while Herons come to fish in it at dusk. The Gulls, a few of which may be seen at any time, though they are more numerous in severe weather, are probably of the Black-headed species. The river-plain, with its endless patches of root-crops, potatoes, and rye, yields little of interest. It is hemmed in by the vineyard slopes, above which we reach the general level of the country to find an almost limitless stretch of forest-land, principally Scotch fir, beech, oak, and birch on a gravel soil. Of this nature is the Kotten Forst, which stretches for eight or ten miles behind Bonn; also the wooded hills and dales of the Seven Mountains, and of the neighbourhood of Rolandseck and Remagen. Only in a few spots does the wood become well-grown timber. Roe are everywhere numerous. Forestry is much more of a science than with us; woodmen and keepers abound, and the larger hawks stand no better chance of survival than in this country. Thus, though the Buzzard was common, I never met with the Goshawk; there are local specimens, however, in the Schloss Museum, with eggs and young.

The town itself, with its fine avenues of elm and horse-chestnut, the large walled gardens attached to the older houses, and, above all, the Botanic Garden, offers many attractions to birds.

Nor should one omit to mention the Sieg, which flows into the Rhine on its right side some three miles below Bonn. Its oak woods (English in everything save the absence of bluebells and primroses), its poplar groves, osier-beds, hazel and alder copses, have the characteristic, rare enough abroad, of sheltering as many small birds as one would meet with anywhere under similar conditions in this country.

The woods were lifeless in mid-winter, except for large parties of Tits, in which the Marsh, Great, Blue, and Coal species were generally represented numerically in the order named. The first and last showed the slightly distinctive characters of the continental races. A spirited trill sometimes led to the detection of the Crested Tit in their company, but it was less numerous than any of the others. A small flock of eight or ten Crested Tits, seen on May 24th in a grove of Scotch firs on forest-land near Siegburg, was probably a family party.

At New Year the mountain-ashes which bordered one of the chaussées were thronged with Fieldfares, Chaffinches, Goldfinches, Greenfinches, Bramblings, and Bullfinches, all busily engaged upon the berries. A Grey Shrike watched them, ready to pick up a weakling or a straggler. A few Starlings wintered in the suburbs, but this bird never became numerous, and was much less prevalent and obtrusive than in England. I only once noted a fair-sized flock, to wit, near Siegburg on July 5th. The Nuthatch spent the winter upon the Schloss elms, but left to breed elsewhere.

Every slight frost brought Crested Larks into the suburban streets, singly or in pairs. About the beginning of March they began to sing, often from some rubbish-heap, or from the ground amongst turnips and cabbages. On March 1st the first White Wagtail appeared, shortly followed by others. On the 15th I noted Meadow Pipits, no doubt on passage; Song Thrushes sang well, though much less numerous than in England. The 17th, the first warm spring day, brought the Black Redstart. In a couple of days they were everywhere, singing from the house-tops, and evidently finding the spires, vanes, and turrets, which form such a marked feature of a German suburban street, much to their liking. The Black Redstart is one of the few continental institutions which the Englishman will regard as comparing

favourably with his own. It sings cheerily and industriously from dawn to dark, often commencing, in fact, some time before daybreak. I have heard it at 3.15 a.m. In the Botanic Garden the label-stands formed a favourite perch, and were also much resorted to by Spotted Flycatchers. On May 23rd a pair of Black Redstarts were leading fledglings about the shrubbery with twittered encouragement and anxious scolding at the intruder. So late as July 9th a noisy brood emerged from behind the rain-water pipe on the Schloss. On Aug. 6th I noticed that the males were coming into song again after scarcely three weeks of silence, and from that time onwards they sang constantly till I left on Sept. 11th.

On March 18th, with warm southerly wind, came a "rush" of Chiffchaffs, and there was undoubtedly a large arrival of Robins about this date. In the woods they were to be heard at every turn, while in winter scarcely one was to be seen. Wood Larks began to sing about the open heath-land on the edge of the forest. On the 20th hybernating butterflies, such as Brimstones and Camberwell Beauties (*Vanessa antiopa*) were flying. Woodpeckers were jubilant, and amatory Jays vented their feelings in a variety of uncouth notes. Two days later Stonechats returned, and on March 24th the first Blackcap reached the Botanic Garden; colder weather set in, and there was no further arrival of this species for ten days.

A party of Lesser Redpolls on April 1st, and Redwings a week later, were no doubt working northward. I heard the Willow Wren on the 9th, and the next day the first Swallows were skimming over the Rhine at Königswinter. I found the Grey Wagtail in pairs frequenting the streams of the Seven Mountains and at Rolandseck, and noted Waterhens and Dabchicks haunting the reedy pool at Heisterbach Abbey. April 14th was noteworthy for the arrival of the Serins. I scarcely expected to meet with this species so far north; possibly it is extending its range. In a few days its artless jingle of a song, more suggestive of a Bunting than a Finch, was to be heard everywhere in suburban gardens. In the Botanic Garden I had full opportunity of watching its fussy and energetic ways. Its usual call-note is a sibilant trill. At pairing-time the males have a wavering flight, like that of a Sand Martin, and often sing upon the wing.

One of them constantly sang while perched on the roof of the Schloss. No doubt two broods are raised, as they were in song until Aug. 5th.

Though surrounded by suburban streets, the Botanic Garden was visited by Jays, and occasionally by the Green Woodpecker; while I have heard the Tawny Owl within five minutes' walk of the busiest part of the town. Kestrels frequented the Minster, and I noted a pair nesting in the transept tower of Cologne Cathedral. A Sparrowhawk daily "worked" the Botanic Garden and adjoining streets. The Hawfinches, constantly seen till April, left the Garden to breed elsewhere, returning in August to feed on the hornbeam seeds.

The Tree Pipit arrived on April 14th. On the 19th I heard the Wryneck in the Friesdorf orchards; two days later Cuckoos were calling and chasing in the more open parts of the forest, and Common Redstarts had settled down to breed in numbers in holes in the pollard beeches. The Wheatear was only represented by an odd bird or two seen on passage; none stayed to breed. On the 25th a change from a long spell of cold weather at once brought the Swift and Lesser Whitethroat. Leafing made as much progress in one night as in the previous month, and Nightingales sang in the Botanic Garden and in the grounds of the villas along the Coblenzer Strasse. Next day I noted the arrival of the Blue-headed Yellow Wagtail and of the Common White-throat.

May came in with cold drying winds, so that some of the migrants were late; but the first week of the month brought the Whinchat, Garden Warbler, Spotted Flycatcher, Turtle Dove, and Common Sandpiper. I met with the Sandpiper from time to time during June and July, so that a few pairs probably remained to breed; in the middle of August the return migration took place, and parties of six or eight were common upon the river. On May 7th the Golden Oriole's flute-like call announced its arrival. Next day, in a hazel-copse on the banks of the Sieg, I was in close proximity to at least half a dozen of these bright-plumaged new-comers. It was perhaps a migratory party. Oaks in young leaf were scattered through the copse, and from one or another of them, sometimes from several different directions at once, came the loud clear call, often interrupted by the harsh

grating alarm-note. I made a careful approach, but there was something mysterious about the way in which the birds stole from tree to tree without showing themselves. Finally, however, amongst the yellow of the young oak-leaves, I got a glimpse of brighter gold, as two male birds, hopping and fluttering from branch to branch, came into the field of my pocket-telescope. After this the Oriole soon became common, and was distributed all through the woods wherever oaks occurred. I could hear half a dozen in a short evening walk along the margin of the forest. But they were invariably shy and wary to the last degree. Time after time I have followed up the call, only, as the result of a patient and noiseless stalk, to hear it give place to a harsh rasping alarm-note as the bird went off. When most successful, I got a hasty glimpse of the bird as it changed its whereabouts in the tree; a good leisurely view of it, never. But I learnt during these stalks that the call-note is merely thrown in as an accompaniment to a low chattering song, rather suggestive of the Starling. This song is not heard until one gets close to the performer, who whistles, sings, and squalls by turns. The Oriole was constantly to be heard in the Botanic Garden, and a pair of them doubtless bred there. In the latter half of July I frequently heard a rippling hawk-like call, which I supposed to be the note of the young. The male was in song up to Aug. 6th, on which date I heard all the different notes well.

A noteworthy feature in the forest was the scarcity of Wood Pigeons. In ten square miles of woodland there were fewer than in most English plantations of as many acres. Ants swarmed, and consequently Green Woodpeckers were numerous. Some of them were probably the grey-headed *Gecinus canus*, but I never identified it with certainty. Pied Woodpeckers preferred the more remote part of the forest. I was always on the look-out for *Dendrocopus medius*, but of the few which I saw at close quarters all appeared to be the Greater Spotted, *D. major*. The Wood Wren occurred sparingly in the forest, always where beech timber prevailed.

But birds were far less abundant in the forest than in the low-lying district round the mouth of the Sieg. Here, in poplars, was the only rookery which I met with, for while Carrion Crows were ubiquitous, Rooks were few and unobtrusive. In the woods

bordering upon several weed-grown creeks which communicated with the river, Nightingales, Common Redstarts, and Tree Sparrows abounded. I twice got a sight of a Hobby in the neighbourhood of one of these quiet back-waters of the Sieg. Before entering the Rhine the Sieg flows parallel with that river for about a mile. The narrow strip of land thus formed, together with the adjacent foreshore of the Rhine, was most noticeable of all for the interest and variety of its bird-life. It is a sandy tract liable to be flooded, planted with osier and various other species of willow, amongst which are water-holes, from which the frogs raise an unearthly chorus. Bare enough in winter, it becomes a veritable jungle by the end of May, as with the growth of the willows comes an upgrowth of nettles and tall weeds of every kind, so matted together with hops, bindweed, and the parasitic dodder that by midsummer it is all but impassable. There are stony tracts at the water's edge, and here on May 8th some small waders drew my attention by a note which seemed unfamiliar. There were three of them in company with Common Sandpipers. It was extremely difficult to see them as they ran over the sand, which they nearly matched in colour, but the telescope soon showed me that I had made the acquaintance of the Little Ringed Plover. They once rose with quite a trill, at another time with a note more like that of their larger relative. I saw a Little Ringed Plover again at the same spot on June 10th, so that a pair may possibly have bred there; but on the 27th, owing, I suppose, to the melting of the Swiss snows, the river was high, and these stony tracts were under water.

A good many Blue-headed Yellow Wagtails were nesting amongst the willow-scrub. The males, in spring dress, perched upon the osier-sprays, or rose from the ground with shrill "chit-ip." Reed Buntings chirped and fluttered into cover. Here and there a patch of willow had been left uncut from the previous year, and every such patch seemed to shelter at least one pair of Reed Warblers. Here they skulked and sang, and here, in default of reeds, they made their nests. I noted that incubation lasted fourteen days. A nest at Nonnenwerth, on May 26th, was about six feet from the ground, in the fork of a small poplar; it was evidently intended to pass for one of the many knots of drift which had caught amongst the twigs. I

specially wished to meet with the Marsh Warbler, but it was not till about May 24th, a full fortnight after the Reed Warblers had settled down amongst the willows, that they reached their summer quarters. In a day or two they had taken possession of the fringe of willow-scrub on both banks of the Rhine. I have never before seen a cover so swarming with any one species of Warbler. I found them just as abundant upon similar ground on the island of Grafenwerth, and beside the Moselle at Coblenz. They skulk much less than the Reed Warbler, often singing, in full view, a sweet and charming song with real melody, some notes as liquid as those of a Goldfinch, though delivered in the hurried style of all aquatic warblers. Many pairs settled down to breed in the rye, which was then in the ear. I have found them several miles from the Rhine, on the driest of corn-land, far from sedge or willow cover, and with no water but a small brook in the neighbourhood. Under such circumstances the song often puzzled me for a moment, so little did the locality suggest the *Marsh* Warbler. I found a nest with two eggs on May 31st, two more with three and five respectively on June 10th. All were in nettles, meadow-sweet, or similar undergrowth. Early in July the song gave place to a low scolding note, which I heard from time to time in the jungle till Sept. 8th. Curiously, I could never meet with the Sedge Warbler or the Great Reed Warbler; once only with the Grasshopper Warbler.

One other denizen of the willow-scrub remains to be mentioned. It was on May 10th that an unknown song drew my attention to a bird perched upon a willow-spray. The telescope showed a Bluethroat in all his glory of white-spotted blue gorget, with black and chestnut band below. He sat like a Redstart, but with his ruddy tail half spread. I soon found that the Bluethroat was common along the Rhine and Sieg, wherever the right sort of ground occurred,—sandy wastes, with clumps of reed or with willow and other undergrowth. The two islands of Nonnenwerth and Grafenwerth, which the Rhine tourist sees as soon as the Drachenfels is passed, both run out into long sandy willow-grown spits, which I found to be tenanted by several pairs. There is no need to describe the song after the excellent account of it given by Mr. O. V. Aplin (*Zool.*, Nov., 1896, p. 427). The males perched upon a reed-stem or willow-spray, always in

spirited attitude, never with the listless manner of a Robin, and sang boldly and sweetly, flirting the half-spread tail with a sort of pump-handle movement, till it was sometimes more than vertical, inclined over the back. They constantly drop down into the herbage to pick up an insect, or dart up into the air for a gnat or daddy-longlegs; or one will jerk up into the air almost like a Whitethroat, and come down in Pipit-fashion, but not so stiffly, singing all the while. Towards the end of May they seemed too busy to sing much. On the 27th I saw one with food in its bill. Its white spot seemed smaller than usual, and was only seen as it gave its scolding note. All this time I saw nothing of the females. On May 31st a male bird scolded and sang in much excitement, so I beat about the scrub, and soon put up a young one which had just left the nest. I soon met with another of the same brood, but even in this supreme crisis of the family affairs the female did not put in an appearance. The young appeared to be spotted like young Robins, but were as red about the tail as the adult. Others were later, or probably two broods were reared, as all through June the males were scolding and carrying food. On the 10th I put up another young one, and for once got a view of the female. Her persistent skulking is in strong contrast to the boldness of the male. I heard the song for the last time on June 27th.

There was much to note in the Botanic Garden during May. Nightingales sang fearlessly on all sides, conscious of full security. On June 12th a pair of them, in great excitement, were leading young ones about the Natural Order beds. Others sang, though gradually less fully, all through June, and I heard a few notes so late as July 6th. Blackcaps were equally numerous. Besides their bold rich notes, they improvise at times in an undertone, with wide-gaping bill, the song being then almost unrecognizable. A Spotted Flycatcher placed its nest upon some of the strong thorns against the trunk of a gleditschia. The Wryneck called from the Schloss elms, Turtle Doves cooed, the Golden Oriole whistled, and on May 14th the Icterine Warbler arrived to take its full share in the chorus. About three pairs settled down to breed in the gardens, showing a preference for the neighbourhood of a piece of ornamental water. I listened with peculiar interest to the song of this bird on account of the discussion with refer-

ence to it then proceeding in the pages of 'The Zoologist.' Little need be added. The song is wonderful for its extraordinary variety, energy, and, if I may so term it, tense elasticity of tone. As the bird babbled volubly with puffed-out bearded throat and half-erected crest, showing its red gape, one could hear in fancy the alarm-notes of Swallow, Blackbird, and of every other bird in the gardens. Early in June the Icterines seemed to become much quieter, singing only a part of their notes, and I thought with less intermixture of harsh and uncouth variations. On July 1st one was singing again in the best of form, but I heard nothing of them after the 6th. Is it not possible that in the recent discussion some writers have described the song of the nearly allied *Hypolais polyglotta* in place of that of *H. icterina*?

The Icterine Warbler was not the last of the migrants to arrive. House and Sand Martins did not put in an appearance till the middle of May, and the Red-backed Shrike was still later. Some of the Sand Martins nested in the outlets of small drain-pipes along the Rhine wall.

Some twelve miles up the river from Bonn, and nearly opposite to Remagen, a bold volcanic bluff—the Erpeler Lei—overlooks the Rhine. Its face has been quarried and shows basaltic columns, while in the rocks above, towards the summit, a pair of Falcons breed. As I passed, one or other of them would sail out overhead with angry outcry. At the foot of the cliff were sloping screes, frequented by Stonechats, Black Redstarts, and Linnets. Here I heard a song which completely puzzled me. It was short, but bright and cheerful, of about the same length and compass as a Redstart's. The telescope showed a bird the size of a Yellowhammer, the sides of its head boldly streaked with black on a whitish ground, and with cinnamon-coloured under parts. It was evidently a Bunting, but not the Ortolan which I had long looked for, and it was not till I had the opportunity of consulting a book that I identified it as the Meadow Bunting, *Emberiza cia*. There were probably half a dozen pairs of them about the screes at the foot of the Lei, and they were common about the adjacent vineyard slopes. On June 21st one of them was carrying food in its bill. I watched a male singing for some time as he sat on a rock in *négligé* Bunting attitude, flipping his tail in Bunting fashion, and raising his head each time to sing; but who would

ever have suspected the song, but for its two or three concluding notes, as of Bunting origin? Again, why Meadow Bunting, surely Rock or Vineyard Bunting, if its habits elsewhere are the same as here? Besides its song, it has a Serin-like trill.

The month of August yielded little of interest. On the 2nd the Willow Wren sang its quiet late summer song, and on the 7th I heard a few notes from the Lesser Whitethroat. The Grey Wagtail came to ditches in the suburbs, and Goldfinches in plenty to the weedy field corners. It may have been "insular prejudice," but it certainly gave one a shock to see bunches of Partridges brought in a fortnight or three weeks before "the First." On Aug. 29th the Chiffchaff sang, and on this and following days numbers of House Martins collected on the University front overlooking the Hofgarten.

In conclusion I may express surprise at the number of species which I failed to meet with. I saw nothing of Woodchat Shrike, Ortolan Bunting, Hoopoe, Quail, or Stork. If my time had been less occupied, however, I might possibly have added some of these to my list.

ON MANX BIRD-NAMES.

BY P. RALFE.

IN the following paper an attempt has been made to collect such Manx names of birds as may still with reasonable certainty be applied. In obtaining the correct Gaelic nomenclature of natural objects there is now a growing difficulty, for of the small and ever-decreasing number who speak the primitive tongue, few are able with precision to identify any but the most common, or in some way conspicuous species. In the impoverished Manx now current, many names have doubtless been lost.

When we turn to the two published dictionaries of the language, we find animal and plant names very numerous in both, but unfortunately their value is impaired by the vagueness and incorrectness of the English equivalents, proving that the compilers had little acquaintance with the English names of the objects signified.

For some birds common here I have been unable to trace any (Gaelic) Manx name, the English or a corruption of it being used in the Gaelic speech. There are, on the other hand, species whose Gaelic names are still frequently or universally used by Manxmen is speaking English.

The Gaelic names are naturally often quite or almost identical with those of Irish and Scotch Highland Gaelic. I am not aware that any trace of the Scandinavian influence for centuries dominant in Man, and which has left so strong an impression on our place-names, can be found among them.

The writer's acknowledgments are due to Mr. J. B. Keig, of Ramsey, and his family, to Messrs. W. Quayle and W. Tupper, of Laxey, and others, whose information and verifications have given this article the greater part of whatever value it may possess.

The following works have also been referred to:—

Cregeen, 'Manx Dictionary,' Douglas, 1835.

Kelly's 'Manx Dictionary' (Manx Soc. vol. xiii., original about 1772, with additions), Douglas, 1866.

- O'Reilly and O'Donovan, 'Irish-English Dictionary,' Dublin.
 Harvie Brown and Buckley, 'Vertebrate Fauna of Outer Hebrides,'
 Edinburgh, 1888; from which the references to Scotch Gaelic
 are mainly taken.
 Macpherson, 'Fauna of Lakeland,' Edinburgh, 1892.
 Mitchell, 'Birds of Lancashire,' London, 1892.
 Rolland, 'Faune Populaire de la France,' tome ii., Paris, 1879.
 Moore, 'Surnames and Place-names of the Isle of Man,' London, 1890.
 Moore, 'Manx Folk-lore,' Douglas, 1891.
 'Manx Note-book,' edited by A. W. Moore, Douglas, 1885-7.
 'Yn Lioar Manninagh' (Transactions of Isle of Man Nat. Hist. &c.
 Soc., 1880 *et seq.*)
 'Manx Bible' (Translation made under direction of Bishop Hildesley
 about 1768), edition 1819.
 Kermode, 'Manx Crosses,' Ramsey, 1892.

The initials M. S. D. refer to the Manx Society's or 'Kelly's Dictionary'; Cr. to 'Cregeen's Dictionary.'

Local *English* names in use on the island are added enclosed in brackets.

An asterisk prefixed to a Gaelic name signifies that the name has been verified as in use at the present time. The erratic nature of Manx orthography will be observed in the variant forms of many names.

MISSEL THRUSH, *Turdus viscivorus*. (Wood Thrush; Scotch Thrush.)

SONG THRUSH, *T. musicus*. Treshlen (M. S. D.), evidently a corrupt diminutive of the English.

FIELDFARE, *T. pilaris*. (Snow-bird.) Ushag-ny; Traghtee or Sniaghtee (M. S. D.). *Ushag-sniaghtey = Snow-bird. These names are probably also often used for the Redwing, *T. iliacus*.

BLACKBIRD, *T. merula*. Lhon, Lhondoo, Lhon-ghoo (M. S. D.); Lhon (Cr.). I think *Lhondhoo = Black Thrush is now the usual form. The legend of the Lhondoo and Ushag-reaisht is thus given in Mr. Moore's 'Manx Folk-lore,' p. 150:—"It is said that once upon a time the haunts of the Lhondoo were confined to the mountains, and those of the Ushag-reaisht (*Charadrius pluvialis*) to the lowlands. One day, however, the two birds met on the borders of their respective territories, and, after some conversation, it was arranged to change places for a

while, the Ushag-reaisht remaining in the mountains till the Lhondoo should return. The Lhondoo, finding the new quarters much more congenial than the old, conveniently forgot his promise to go back. Consequently the poor Ushag-reaisht was left to bewail his folly in making the exchange, and has ever since been giving expression to his woes in the following plaintive, querulous pipe :—

Lhondoo, vel oo cheet, vel oo cheet ?

Blackbird, are you coming, are you coming ?

The Blackbird, now plump and flourishing, replies :—

Cha-nel dy bragh, cha-nel dy bragh !

No, never ! no, never !

The poor Ushag-reaisht, shivering—

T'eh feer feayr, t'eh feer feayr !

It's very cold, it's very cold !”

For “a quaint fancy derived from the Blackbird's and Thrush's songs,” see p. 151 of the same work ; and in the ‘Manx Notebook,’ No. 2, 55, the song of the former is thus prettily rendered (with a charming illustration) into Manx :—

Kione jiarg.	Kione jiarg.
Apyrn dhoo.	Apyrn dhoo.
Vel oo cheet ?	Vel oo cheet ?
Skee fieau !	Skee fieau !
Lhondoo.	Lhondoo.
Red head.	Red head.
Black apron.	Black apron.
Are you coming ?	Are you coming ?
Tired waiting !	Tired waiting !
Blackbird.	Blackbird.

WHEATEAR, *Saxicola ænanthe*. (Stonechatter.) Claghyn-cloie (Cr.) ; Clachan-ny-gleiee, Clogh-ny-cleigh (M. S. D.) = Stone of the hedge, cf. Clochirean, Scotch Gaelic. This is one of the “Shiaght Cadlagyn” or “seven sleepers” of ‘Manx Folk-lore’ (Kermode, ‘Yn Lioar Manninagh,’ I. i. 44).

STONECHAT, *S. rubicola*. (Stonechatter ; Blackcap ; Nick-chick). *Claghyn-cloie is applied to this species also, and it is probably the Kione-doo-ny-eeigynyn = “Black-head of the gorse” of the M. S. D.

WILLOW WARBLER, *Phylloscopus trochilus*. (White Wren; Tomtit.) *Drein-vane = White Wren. These names are of vague application, and "White Wren" seems sometimes to denote some fancied variety of the Common Wren. Mitchell gives "White Wren" for the Willow Warbler in Lancashire.

SEDGE WARBLER, *Acrocephalus schoenobaenus*. (Mocking-bird.)

HEDGESPARROW, *Accentor modularis*. (Rough Wren; Little Thrush; Blue Buntie, ? because its eggs are blue.) Drein-mollagh = Rough Wren, rendered "Titmouse" by Cregeen; *Ushag-keir = Grey-bird; *Boght-keir; *Bo'keir = Poor grey (bird).

GREAT TITMOUSE, *Parus major*. (Blackcap.) As in Lancashire (Mitchell).

WREN, *Troglodytes parvulus*. (Jinnie; Jinnie Wren.) *Drein, Drean (M. S. D. and Cr.); Dreeain (M. S. D.), cf. Ir. Dreathan; Sc. Gael. Dreollan, Drethein. The ceremonies on St. Stephen's Day connected with the Wren are well known. See 'Manx Folk-lore,' p. 133, *et seq.*

PIED WAGTAIL, *Motacilla lugubris*. Ushag-vreck (M. S. D.) = Pied-bird; Skibbag-ny-vultin (M. S. D.); Ushag-voltee (Cr.).

MEADOW and ROCK PIPITS, *Anthus pratensis*, *A. obscurus*. *Ushag-y-veet; *Ushag-veet; *Billy-yn-tweet; *Tweet; *Cheet or Chit Veg. Names expressing the note.

SWALLOW, *Hirundo rustica*. *Gollan-geayee or gheayee (M. S. D. and Cr.) = Fork of the wind. Used in Ps. cxxxiv. 3. Cf. Ir. and Sc. Gael. Gobhlan Gaoithe; Welsh Gwennol; Breton Gwignol, Gwignelenn. One of the "seven sleepers" (Y. L. M. I. i. 44).

GOLDFINCH, *Carduelis elegans*. *Lossyr-ny-keyley = Flame of the wood (M. S. D.); Kiark-my-Leydee (Cr.) = My lady's hen. As in Lancashire, "Flinch" is here a common error for "Finch."

SPARROW, *Passer domesticus*, is rendered "Sparroo" in the Manx scriptures, as if even at the date of translation no Gaelic Manx name was known. (Spadger.)

CHAFFINCH, *Fringilla cœlebs*. (Spink) in Lonan.

GREENFINCH, *Ligurinus chloris*. (Green Linnet.)

LINNET, *Linaria cannabina*. (Philip.) Bytermyn (Cr.). *Fillip-ny-kempey = Philip of the hemp, is in M. S. D. rendered

Bunting. Mitchell says that the Twite (*L. flavirostris*) is called "Manx Linnet" in Lancashire.

COMMON BUNTING, *Emberiza miliaria*. *Pompee-ny-hoarn (Cr.)=Bunting of the barley. Cregeen translates this merely "a small bird." This species is no doubt also Ushag rouayr (or roauyr) ny hoarn=Fat bird of the barley, of both dictionaries.

YELLOW BUNTING, *E. citrinella*. *Ushag-wee (Cr.); Ushag-vuigh (M. S. D.)=Yellow-bird; cf. Sc. Gael. Bhuidheag.

SKYLARK, *Alauda arvensis*. *Ushag-y-tappee, Ushag-tappagh (M. S. D.)=Crested-bird; Ushag chabbagh (M. S. D.)=Stammering or babbling bird; Ushag happagh (Cr.). Cf. Sc. Gael. Uiseag, I. Fuiseog. But Ushag is the common Manse generic term for "bird," as may be seen by many compounds in this list, although Eean (cf. Sc. Gael. and I. Eun) is also used. In Lonan, Ushag is usually pronounced Ulliag.

STARLING, *Sturnus vulgaris*. *Truitlag (M. S. D. and Cr.) Cf. Sc. G. Druideag; I. Truid, Truideog; Wel. Drudwy; Bret. Tred.

CHOUGH, *Fregilus graculus*. *Caaig (Cr.); Caag (M. S. D.); pronounced "Keg," cf. Sc. Gael. Cathag. M. S. D. translates "Chough, Daw, or Jay"; Cregeen, "Jay." This is a well-known name as applied to this species; I have not heard it used for the Jackdaw, as in Scotch Gaelic.

MAGPIE, *Pica caudata*. *Piannad, Pieanat (M. S. D.); Pieanat (Cr.). Cf. Sc. Gael. Pitheid, &c.; I. Pighe, Pighead; Eng. Piet, Pie-Annet, of which these are corruptions.

JACKDAW, *Corvus monedula*. Juan-teayst (M. S. D. and Cr.). An attempted translation of the English name read as "John Dough!"

ROOK, *C. frugilegus*. *Craue-feeagh (M. S. D.).

HOODED CROW, *C. cornix*. (Greyback). Fannag, Trogh, Troghan (M. S. D.); Fannag (Cr.). Cf. Sc. Gael. Feannag; I. Feannog. Mitchell gives "Manx Crow" as a Lancashire name.

RAVEN, *C. corax*. *Feeagh (M. S. D.; Cr., Lev. ii. 15, &c.). Cf. S. Gael. Fitheach; I. Fiach, Fitheach. Feeagh-vooar is properly the Raven, Feeagh including also the "Greyback" and Rook. The Raven is commemorated in various place-names, as Edd Feeagh-vooar=Raven's nest; Glion Feeagh=Raven's glen, &c.; and perhaps the Scandinavian Ramsey; and here, as else-

where, Fiach became a family name, now translated into Crowe. On Manx-inscribed crosses of the Norse period (eleventh to thirteenth century) we find in runes the personal name FIAK and its compounds UFAIK and UFAAK (*i. e.* O'Faac) and (?) FEEAK, the former part of the name being in this case defaced and uncertain (MALFEEAK and THURFEEAK suggested). Cur meer da'n feeagh, as hig eh reeisht (Give a piece to the Raven, and he'll come again), and Myr s'doo yn feeagh, yiow eh sheshey (Black as is the Raven, he will find a mate) are Manx proverbs. A bit of Raven-lore, too long for quotation here, is given by Rev. T. E. Brown, in 'Brown's Popular Guide to Isle of Man,' ed. 1877, p. 352.

CUCKOO, *Cuculus canorus*. *Cooag (M. S. D., Cr., Lev. ii. 16). Cf. Sc. Gael. Coi, Cuach; I. Cubhag. One of "the seven sleepers."

LONG-EARED and SHORT-EARED OWLS, *Asio otus* and *A. accipitrinus*. Hullad, Kione-chayt = Cat's-head (M. S. D.); Hullad (Cr.). *Hullad-screesh. Hullad is used in various scriptural passages; cf. Eng. Howlet.

EAGLE, *Haliaetus albicilla*, was probably the Manx species. *Urley (pr. Urla), (M. S. D., Cr., and in Lev. xi. 18, Deut. xiv. 12, Job. xxxix. 27); but in Lev. xi. 13 and 17, strange to say, the English "Eagle" is inserted. Cf. Sc. Gael. Iolair; I. Iolar; Welsh and Brit. Er. The name Cronk Urleigh, formerly Renurling, probably refers to the Eagle as a device of the Stanleys, lords of Man, the place having been used as a Tynwald.

PEREGRINE FALCON, *Falco peregrinus*. (Falcon Hawk; Royal Falcon).

HAWK (generally). Shawk (M. S. D. and Cr.). Cf. Sc. Gael. Seobhag; I. Seabhac; Welsh Hebog. Shirragh (M. S. D.); Stannair (Cr.). *Shirragh-ny-Giark (Cr.) = Hen-hawk, refers probably to the Sparrowhawk (*Accipiter nisus*). Shawk in Deut. xiv. 13 = Glede, and in Lev. xi. 16, Hawk in the English version; in Lev. xi. 14, Shyrragh = Kite.

CORMORANT, *Phalacrocorax carbo*. (Diver; Jinnie Diver.) SHAG, *P. graculus*. The name *Shag, given in both Manx dictionaries, applies to both species; and both give also Fannag-varrey = Sea-crow. Feeagh-marrey = Sea-raven appears in Lev. xi. 17. Arrag vooar or Arrag'ooar means *P. carbo*, perhaps only the young

white-breasted birds. Cf. I. Siagaidh, Siogaidh; Sc. Gael. Orag; I. Odharog, "a young Cormorant." Various isolated crags round our coast are well known as "Shag Rock," "apricis statio gratissima mergis."

GANNET, *Sula bassana*. (Johnny Gant). *Gant, Gaunt (M. S. D.).

COMMON HERON, *Ardea cinerea*. Coayr. *Coayr-ny-hastan = Eel Crane, Coayr-glass = Grey Crane (M. S. D.); Coar-ny-hastan (Cr.). Cf. Sc. Gael. Corra-ghlas, Corr; I. Corr, Corriasc, Corr-ghlas; Wel. Creyr-glâs; Bret. Kerc'heiz; cognate with Gr. *νερανός*; Lat. Grus; Eng. Crane, &c. In Deut. xiv. 18, "Heron" is Coar-ny-hastan, and Coar in Lev. xi. 19. As in some other parts of Britain, the Heron is here generally known by the name Crane.

BITTERN, *Botaurus stellaris* (extinct). Ushag-ny-boob (M. S. D.). Cf. Sc. Gael. Bubaire; Welsh Aderyn y Bwn.

GOOSE (gen.), *Anser* sp. *Guiy (M. S. D., Cr.). Cf. Gael. Giadh; Wel. Gwydd; Bret. Gwas, Gwai, &c.

SWAN, *Cygnus ferus*, &c. *Ollay (M. S. D., Cr., Lev. xi. 18). Cf. Sc. Gael. Eala; Bret. Alar'ch; Lat. Olor.

DUCK, *Anas boschas*, &c. *Thunnag (M. S. D., Cr.). Cf. I. Tonnog.

TEAL, *Querquedula crecca*. Laagh, *Laaghag (M. S. D.). Cf. Sc. Gael. Lach, Lacha = Duck; I. Lacha = Duck.

RING DOVE, *Columba palumbus*. *Calmane-keeylley (M. S. D.) = Wood-pigeon. Cf. Sc. Gael. Calman coille; I. Colm = Dove; Lat. Columba.

RED GROUSE, *Lagopus scoticus*. Kellagh-ruy = Red cock; Kiark-freoai = Heath-hen (M. S. D.). Cf. Sc. Gael. Ceare-Fhraoich, Coilleach-Ruadh.

PARTRIDGE, *Perdix cinerea*. *Kiark-rhennee or rheinnee (M. S. D., Cr., 1 Sam. xxvi. 20) = Fern-hen; Patrag, Eean-patrag (M. S. D.). Cf. Sc. Gael. and I. Ceare Thomain; Sc. Gael. Ceare Chruthach. M. S. D. applies Kiark-rhennee also to the Woodcock (*Scolopax rusticola*).

LANDRAIL, *Crex pratensis*. *Eean or Yeean-raip, Eean-raip (M. S. D.); Eean-reap (Cr.)—onomatopœtic.

MOORHEN, *Gallinula crex*. *Kiark-ushtey (M. S. D.) = Water-hen ("a Coot," Cr.). Cf. Sc. Gael. and I. Cearc-uisge.

GOLDEN PLOVER, *Charadrius pluvialis*. *Ushag reaisht, reeaisht, or reeast (M. S. D. and Cr.)=Bird of the waste. *Fedjag (pr. Fashag) reeast (Cr. and M. S. D.)=Whistler of the waste; Feddag (M. S. D.). Cf. Sc. Gael. Feadag, Feadag-bhuidhe; I. Feudog. See Blackbird, *supra*. Some Manx people say Ushag-reeast is applied to some smaller bird, perhaps the Redwing or Snow Bunting; but the legend, with its imitation of the Plover's well-known cry, cannot apply to either of these. Mr. Moore says this is also the "little red bird of the black turf-ground" in the ballad on pp. 149, 150 of 'Manx Folk-lore'; but the description seems very inappropriate.

RINGED PLOVER, *Ægialitis hiaticula*. (Miller or Millard; Sand-lark; Sea-lark; this and other small shore-birds.) I do not know the etymology of the first two names; perhaps simply English "Miller" from the bird's colouring. Can it have any connection with Norse "Sandmyla" (Holmgren, 'Skan. Foglar,' ii. 766)?

LAPWING, *Vanellus cristatus*. (Peewit.) *Eairkan (M. S. D.); Earkan (Cr.). The "Lapwing" of Lev. xi. 19 is also so rendered in the Manx Bible. Derived from Eairk, "a horn." Cf. Sc. Gael. Adhareag-luachrach, Adharean-luachrach; I. Adhairein; Welsh Conchwiglan; Bret. Kernigel. There is a hill-farm in Lezayre called Parknearkin or Park-ny-earkan; and Mr. Moore derives from the bird's name also the appellation of a shore in Maughold, Traie ny Earkan or Earaghyn, which I have heard locally explained in the same way; but a different and perhaps more likely derivation is given in 'Yn Lioar Manninagh,' vol. i. part ii. p. 75.

OYSTERCATCHER, *Hæmatopus ostralegus*. *Garey-vreck; *Gareebreck (Cr.); *Bridgeen. Vreek = Pied. For the meaning of Garey, see 'Fauna of the Outer Hebrides,' p. 117, where the equivalent Gearra is said to be applied to various animals and birds. In the same volume Gearra-breac is given as a name for the Black Guillemot (*Uria grylle*). Cf. Sc. Gael. Bridean, Gillebride; I. Gillebride.

SNIPE, *Gallinago cœlestis*. *Coayr-heddagh (M. S. D.); Coar-chrattagh (Cr.); two attempts at spelling the same sounds. *Coar-ny-heddagh. Cf. Sc. Gael. Gobhar Athar; I. Gobhar-oidche; German Himmelziege; French Chèvre céleste, &c. Coar (Crane) in the Manx names should doubtless be Goar (Goat).

COMMON CURLEW, *Numenius arquatus*. *Crottag (M. S. D.), (pr. Crothag). Cf. Sc. Gael. Crotach-mhara, Crotag-mara.

TERN, *Sterna* sp. *Gibbyn-Gant = Gannet of the Sand-launce (Ammodytes).

BLACK-HEADED GULL, *Larus ridibundus*. *Pirragh (Cr.). I have heard this given as Perrac, Parrac, and even Parrakeet. Cregeen translates "a species of gull, pinquin" (*sic*), but this is the species to which the name is applied. Cf. Sc. Gael. Tarroch = Kittiwake; Lanc., &c., Turnock.

HERRING GULL, *L. argentatus*; and other species. *Foillan (M. S. D. and Cr.), (pr. Fölyan). Cf. Sc. Gael. Faoilean, Faoileag; I. Faoilleann, Faoileog; Wel. Gwylan; Bret. Gwelan, Goulen. There is a Traie Foillan (Gull's Shore) in Maughold, and an Ellan-ny-Foillan (Gull's Island) in Lezayre.

LESSER BLACK-BACKED GULL, *L. fuscus*. (Parson, at Peel.)

GREAT BLACK-BACKED GULL, *L. marinus*. Juan-mooar (Cr.) = Big John.

SKUA, *Stercorarius* sp. *Shirragh-varrey = Sea-hawk.

RAZORBILL, *Alca torda*. (Ducker.) Coltrag, Caltrag (M. S. D.); Coltrag (Cr.). The latter translates "a coulter-bill fowl." I have not heard this name used. Does it apply to this species, or the Puffin, or both? Cf. Sc. Gael. Coltrachan = Puffin.

COMMON GUILLEMOT, *Uria troile*. *Stronnag (not in dictionaries), from Stroin = nose, in allusion to its pointed beak; or its derivative Stron, Stronneraght = Snuffle, from the murmuring cry.

BLACK GUILLEMOT, *U. grylle*. (Sea-pigeon, and, according to Mr. Kermodé, Rock Dove, at Peel.)

PUFFIN, *Fratercula arctica*. (Sea-parrot.) Pibbin (Cr.). The "Manx Puffin," so often mentioned by old writers as taken from holes in the Calf of Man for food, was of course *Puffinus Anglorum*.

The writer believes that this is far from a complete list of the names recoverable, by careful and leisurely investigation, especially in the remoter districts; but it may perhaps serve as a foundation.

MUSEUM REPORTS.—I.

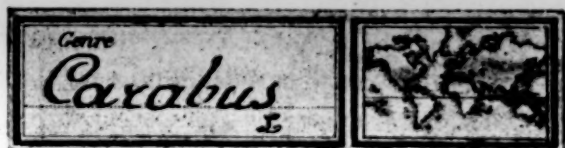
MUSÉE ROYAL D'HISTOIRE NATURELLE DE BELGIQUE:
BRUSSELS.

By G. SEVERIN, *Aide-naturaliste au Musée.*

I AM unable to report as to the whole of our zoological collections. At a standstill, except in the palæontological series, our Museum has not advanced for some years, except in Entomology, of which I will gladly speak. My aim on my arrival at the Museum was above all things to have a collection useful to everybody, and it will perhaps be of some interest to state how I worked for that purpose, and with what result.

It must be remembered that I have been at the Museum only six years, but these have proved to me that collections, even the most important, can in a short time be brought to complete order. Above everything I have abandoned all idea of specialising a group or family of insects. I am interested as much in Coleoptera as in Hemiptera, or in Crustacea as in Arachnida. *I determine nothing myself*, except any well-known species of which I know the name, and of which there can be no doubt. All our entomological collections are determined by distinguished specialists, and I prefer to await the offer of assistance rather than to solicit it. When the insects are determined each receives a label with the name of the verifier and the year when verified, and a number is attached to the species repeated with all specimens, corresponding to the name given by the specialist, which name is written in a register-catalogue. If a second specialist should study the same insect his identification is indicated on another label without any change of number if his verification should agree with the former one. A new number below the former number indicates a *divergence of opinion* between the specialists. After a certain time the insects so studied will have a great scientific value and the collection a strikingly typical status. This system is com-

pleted by a locality-label at the bottom of the case, after the following model, which will explain to you our method.



My collections are divided into series:—1st. "The General Collection," to which the foregoing labels apply, and is arranged so as to exhibit seventy-five per cent. of the species actually described.

2nd. "The Belgian Collection," which contains the labels of all the species which may be met with in Belgium.



There is also a catalogue, followed by large maps of the country, and containing all the notes and descriptions which we have of our insects. There are about 14,000 cards.

3rd. The Congo Collection, in process of formation, and which I will refer to further on.

All these collections are found under three forms:—1st, The Collection; 2nd, Supplements; 3rd, Duplicates. All which we receive are immediately placed among the "Supplements," and when a sufficient number are obtained their study is commenced.

It will be seen that the system is simple, and allows a very rapid arrangement of any collection, no matter how important. Thus it has been possible for me to arrange in less than six years about 125,000 species and 700,000 specimens, with further 700,000 duplicates, the whole arranged in 6000 glass cases. These are not all determined, but at least arranged and set in order; for I still await some specialist to occupy himself with some of the genera. It must be pointed out, however, that though I say the arrangement has been carried out in six years, the classification to a great extent was commenced fifteen years before I came to the Museum.

I have suppressed all conventional colour in my collections, the geographical indications employed from the beginning in our Museum being quite sufficient. It remains for me to speak now of our additions during the last few years.

Our collection of Coleoptera has been always very rich. I do not enumerate those obtained in our neighbourhood or the result of small purchases.

CARABIDÆ. Coll. Putzeys.

DYTISCIDÆ. Colls. Chevrolat, Severin.

STAPHYLINIDÆ. Coll. Germain. (European.—These are the insects which have been used by Fauvel in his 'Faune Gallo rhénane'). Coll. Fairmaire (Exotiques).

COPROPHAGI. Coll. J. Thomson.—Coll. Lafontaine.

MELOLONTHINÆ, ANOMALINÆ, RUTELINÆ. Coll. J. Thomson.—Coll. Lafontaine.

BUPRESTIDÆ. Coll. Weyers.

LYCINÆ, LAMPYRINÆ. Coll. Guérin Méneville.

HETEROMERA. Coll. J. Thomson.

CURCULIONIDÆ. Coll. Dejean, Lacordaire, Racine, Castelnau, Gobert.

ANTHRIBIDÆ et BRENTIDÆ. Coll. ditto, ditto.

SCOLYTIDÆ. Coll. Chapuis.

LONGICORNIA. Coll. Lacordaire.

CHRYSOMELIDÆ. Coll. Chapuis, Castelnau, Semper, Duvivier.

HYMENOPTERA. Les coll. Wesmael.

HEMIPTERA. Coll. Van Volxem.

LEPIDOPTERA. Coll. (Palæarctic) Wienmann, Breyer, Defré, Thysebaert.

The principal additions during the last four years have been the insects from the Congo. We have bought the Duvivier Collection, so that our African collection will be the richest, if it is not so already.

Jan. 23rd, 1897.

NOTES AND QUERIES.

MAMMALIA.

LEMURIDÆ.

Breeding of the S. African Galago in Confinement.—The interesting little animal known to the Boers as the "nagt-apie," and to zoologists as *Galago maholi*, was generally an inmate of my small menagerie in the Transvaal, and is a common pet both there and elsewhere. It can usually be purchased at Pretoria from the bush-veld Boers who bring their waggons to the market, and the little animals—for they are usually pairs—are simply secured by a light thong round the neck.

The first pair I kept, and in a moderately small cage, bred within the initial twelve months of captivity. One was produced at birth, which evidently died at a very early age, for after death it was thrust outside the sleeping or day-hiding chamber, when I first saw it. I should probably have succeeded in rearing stock from this pair, but for one of those untoward and unforeseen events which dog the steps of the keeper of live animals. The cause of the trouble in this instance was a Meyer's Parrot, *Psittacus meyeri*, between which and the male *Galago* a remarkable antipathy existed; the last would leave his nest, even in the daytime, if the bird was loose and came in front of his cage. One morning, when the Parrot had been loose all night, I found the male *Galago* dead, his snout being lacerated where the bird had bitten him through the wire netting. This proved that he had sought to fight the Parrot, as otherwise he was perfectly safe and protected in his cage. It is an interesting question whether there is a general antipathy between the Parrot and the *Galago*, and if so, why? Dr. Günther informed me that *G. maholi* bred in captivity in England in 1894, and, as the animal is frequently brought home, success in breeding may probably be obtained by those who will take the trouble to secure it. That possibly may be best achieved by interfering as little as possible with the sleeping or day-hiding place of the animals, or, in other words, by leaving them alone.—ED.

AVES.

Eared Grebe in Cumberland.—An Eared Grebe, apparently an adult bird in winter dress, was shot upon the river Wampool early in December, 1896. It was quite alone, and was resting on the sand at the water-side

when it was shot by one of the professional wildfowlers of the Solway Firth. This species is rare on the N.W. coast of England. — H. A. MACPHERSON (Allonby Vicarage, near Maryport).

Fulmar and Surf Scoter in Cos. Sligo and Mayo.—On Oct. 19th, when driving to Ballina, I observed a dead Gull (as I thought) entangled in a small thorn-bush on the side of the road near the village of Castleconnor, Co. Sligo; but to my surprise, on examination, found it to be a very fine fresh specimen of the light-coloured variety of the Fulmar. As we had a continuance of northerly and north-easterly gales for some days before, the poor bird had evidently been driven before the storm and blown into the bush, from which, in its exhausted state, it was unable to extricate itself. The place where I found the bird is at least two miles and a half from Killala Bay, and nearly half a mile from the nearest part of the Moy Estuary. Although I have found dead Fulmars washed ashore by the surf on the Eannicrone Sands, and on one occasion found a pair alive, but too exhausted to move above the edge of the surf, yet I never met one inland before.

When out punt-shooting on Dec. 19th, I was fortunate in obtaining a very fine female specimen of one of our rarest American visitors, the Surf Scoter. A smart frost the night before induced me to launch my punt, and look out for any Mallards driven down by the frost to the estuary, as they usually are when the mercury in the thermometer falls below 26°. On reaching the stony point where the Ducks rest at about 7.30 p.m., owing to the faint light, I was unable to make them out lying amongst the brown seaweed; and, after waiting for some time vainly trying to see them, six fine Ducks rose out of the wrack, going off without a shot. Letting the punt drift down channel with the ebb-tide, I met seven or eight Wigeon near Bannross, and fired, knocking down five out of the bunch, but picking up only four, one cripple escaping by hiding in the seaweed. Loading in a hurry, I hastened on to cross the flats to Moyne Channel before the tide left the banks, and was barely able to do so, having to leave the punt and push her before me in the shallow water for a hundred yards or so, until I got into the channel. I found the sands on either side well covered with Godwits, Curlew, some flocks of Dunlins, and Sanderlings, and on the Bartragh side, a flock of forty Sheldrakes resting after their morning's feed, but well out of shot.

Meeting neither Wigeon nor Ducks, I still kept down channel, till, reaching "Moyne Pool" (an expansion of the channel), I saw a large flock of Godwits at the lower end, nicely placed for a shot. Seeing no chance of Wigeon I sat down to the Godwits, but before coming within shot a pair of heavy black Ducks flew past up channel for a short way, then turning, flew down again, pitching about a quarter of a mile below me. Thinking them to be Common Scoters (of which numbers are always in the bay just out

side the surf), I left the Godwits, and began to paddle down to the Ducks ; but before I had gone fifty yards they rose again, and as they flew past, observing some white showing on the head of one, it suddenly struck me that they were the rare Surf Scoters, birds that I had never seen alive. So, turning the punt, I paddled up to where they had pitched, about a quarter of a mile above me ; they were not at all shy, and, letting me get within fifty yards, I fired my big gun, loaded with an Eley's wire cartridge, but unfortunately at the moment forgetting that at short range the cartridge threw high, I did not depress the muzzle sufficiently, and the consequence was that the body of the charge went over them, a couple of grains only taking effect, one killing the female, the male being only winged. On the smoke clearing away I saw one bird lying dead on the water, the other having disappeared on being struck. However, he soon appeared on the surface about forty yards off, when I saw that he was a beautiful adult male, his orange-red bill and white patches on head and nape of neck contrasting strongly with his jetty-black plumage. Taking up my cripple-stopper, I let him have a charge of No. 6, which had no more effect in stopping him than a charge of sand. This shot sent him under water again, and then began a most exciting chase all about the pool and channel, the bird diving and turning in all directions when under water, and by these manœuvres throwing me off of his line so frequently, that, though always keeping him moving, I could never get closer than thirty or forty yards, and as he always swam under the water, showing only his head and neck stretched out on the surface, offered no mark to fire at from such a distance. Although I fired four times, I do not think a grain touched him, for he used always to duck the flash, the shot striking the water over the place he had been, and just too late. The chase, unfortunately for me always a stern one, lasted for over an hour and a quarter, when, getting into a dark patch of water caused by the shade of the land, he fairly blinked me by darting back and getting down channel when I thought he had gone up, and I lost time searching the upper part. Losing such a prize after being winged was most annoying, but the strength and endurance of the bird was surprising, for at the time I lost sight of him he appeared as fresh as when the chase began.

The Surf Scoter is one of our rarest visitors, W. Thompson recording only one specimen, an adult male, shot at Ballyholme, Belfast Bay, on Sept. 9th, 1846 ('Birds of Ireland,' iii. p. 118); and Sir R. Payne-Gallwey mentions a second as shot in October, 1880, at Clontarf, Co. Dublin ('Fowler in Ireland,' p. 113); while Mr. R. M. Barrington obtained an immature female, shot at Crookhaven, Co. Cork, on Nov. 5th, 1888 (Zool. 1889, p. 32). Mr. Sheridan, of Achill, Co. Mayo, speaks of shooting a female with a rifle-ball in Achill Sound in 1870. So the five above-

mentioned records show what a very rare visitor this Duck is to Ireland, as rare as another American Duck, the Hooded Merganser, which has also occurred only five times.—ROBERT WARREN (Moy View, Ballina).

[With reference to the Surf Scoter whose escape is so graphically described above, Mr. Robert Warren has just informed the Editor that the wounded bird of Dec. 19th was shot by his friend Mr. A. C. Kirkwood, of Bartragh, in the Moyne Channel, near Killala, on Jan. 18th. We feel equally pleased that the specimen has been secured, and that the sufferings of the bird are at an end.]

Landrail in Chester in December.—A Landrail, *Crex pratensis*, was shot on the meadow-land bordering the estuary of the Dee on Dec. 23rd, 1896. It was a male bird in good plumage, but weighing only 5½ ounces. Its failure to migrate in the autumn was probably explained by the fact that one of the wing-bones (the radius) had evidently been fractured somewhat recently, though perfectly united at the time of death. The specimen has been deposited in the Grosvenor Museum, where Mr. Newstead, the curator, examined the stomach, and found it to contain woodlice, dipterous grubs, and other animal matter, besides the usual quantity of small pebbles. W. HENRY DOBIE (Chester).

Rare Birds at Hastings.—On Dec. 5th, 1896, a young female Gadwall, *Anas strepera*, was shot at a swampy place called the Fleet, which is just within the boundary of Kent where it joins Sussex; weight, 2 lbs. ¼ oz. It was with a young Pintail, which was also secured. Another almost identical specimen was procured at Iden, near Rye, Sussex, on Boxing Day. On Dec. 8th last a young male Cormorant, *Phalacrocorax carbo*, was shot in the Alexandra Park, Hastings, at one of the reservoirs that supply the town; it weighed 6 lbs. 1 oz., and the gizzard contained a roach weighing 1 lb. It has been presented to the local museum. It had probably been blown inland by the gale of the day before, as where it was found is about a mile from the sea, and in the centre of the town.—GEORGE W. BRADSHAW (Hastings).

Capture of a Common Bittern in Darenth Wood, near Dartford.—On the morning of Jan. 14th a Mr. Nettlingham, having occasion to go about some wood which had been cut, noticed what he at first thought was a hen Pheasant. Closer observation, however, proved that this was not the case. The bird was sitting with drooping wings, neck and head laid along the back, and with the beak pointing straight upwards. Arming himself with a few stones he approached the bird and knocked it down at once. I saw it alive the same evening, but it died the next morning, and is now being preserved by Mr. Davis, of Dartford. This is the second specimen of the species I have seen, and the third I have heard of as

occurring in this neighbourhood within the last few years.—A. B. FARN (Mount Nod, Greenhithe).

The Wood-Pigeons in the London Parks.—That birds and other animals accommodate themselves to their surroundings is well known to field naturalists, but a few remarks showing how the habits of the London Wood-Pigeons have been affected may perhaps not be altogether uninteresting. In the first place they have taken to perching freely on the buildings in the vicinity (as is the case with the Brighton Rooks), and on one occasion I saw a pair carrying on a courtship on the top of one of the chimney-pots of St. George's Hospital. I was struck with astonishment at seeing a Wood-Pigeon sitting on its nest in the tracery outside a large window of the Rijks Museum in Amsterdam in 1891, and I subsequently learnt that the nest had been seen in the same situation on a previous occasion; but I was still more surprised to see one of this species gather a twig from a tree in St. James's Park and carry it to a window of the India Office, where it disappeared in a niche, just the sort of place for a House Pigeon. In the wild state I have often found them breeding from April to October; but three or four years ago, on Feb. 8th, during a hard frost, when hundreds of people were skating on the ice in St. James's Park, I saw a Wood Pigeon sitting on a nest within fifty yards of the skaters. The nest was, however, forsaken shortly afterwards. The weather had been previously very mild. This winter, on Dec. 27th and 29th, 1896, I noticed one of these birds preparing a nest in an elm tree opposite to the India Office. The greater number of them, however, leave London in the autumn, returning early in spring. I once witnessed such a return between 4 and 5 p.m. on a February afternoon. A large flock was circling round at a great height, gradually getting lower and lower, till it finally settled in Kensington Gardens. From that date the parks were full of Pigeons. They become very tame, perching on the arms and shoulders of those who are accustomed to feed them. In the early spring they may be seen busily feeding on the tender shoots and flower-buds of the elm and other trees.

Numbers of House-Pigeons have found their way to the lawn on the north of Rotten Row, which is frequented by their wild cousins, and they have learned to perch in a large plane tree in the dell, a favourite resting-place of the wild birds. I have seen as many as fifty tame birds sitting in the tree at the same time.—JOHN YOUNG (64, Hereford Road, Bayswater).

Rooks in the West End of London.—With reference to my communication (Zool. 1895, p. 227) recording the nesting of Rooks in Cornaught Square and Stauhope Place, I am sorry to have to state that both these sites have been untenanted during the year 1896; so that I fear in all probability the year 1895 will be the last date for the breeding of Rooks in the West

End. Strange to say, there were still a few nesting in Gray's Inn Square.—JOHN YOUNG (64, Hereford Road, Bayswater).

The Stock-Dove in Ireland.—I shot a Stock-Dove here on Jan. 6th. It is a level wooded locality about twenty miles from Ravensdale, where Lord Clermont recorded the first Stock-Dove in Ireland (Zool. 1876, p. 4798). I have shot many hundreds of Ring-Doves here, but have never secured a Stock-Dove before.—G. H. PENTLAND (Black Hall, Drogheda).

INSECTA.

A Proposed Explanation as to the Appearance of Light- and Dark-coloured Butterflies during the Day.—Dr. Gregory, in his 'Great Rift Valley' (pp. 275-6), has made some original suggestions on the colours of butterflies as observed by him in East-Central Africa. He writes as follows:—"Another point which interested me in reference to insect coloration was the influence of the different capacities for the absorption of heat possessed by different colours. A black object becomes more heated than a white one, when both are exposed under the same conditions. An insect has so much surface in proportion to its bulk that dark-coloured species are heavily handicapped when exposed to the intense sun of the tropics. This is the simple explanation of the fact, which impressed itself upon me as soon as I began to collect butterflies, that the light-coloured species fly in the daytime, and the dark ones in early morning and at dusk. I made considerable collections at Ngatana, at all hours of the day, to test this point. Thus on Jan. 30th I began collecting at 5.45 a.m., and found only species which are mainly of dark brown colour, such as *Hypolimnas misippus* and *Junonia clelia*. At 6.30 a reddish-brown species, *Limnas klugi*, began to appear, and this was the only species caught during the next half-hour, though this was abundant. A little before half-past seven a light brown species, *Acræa cecilia*, made their appearance, followed immediately by numbers of light-coloured butterflies, such as *Teracolus syrtinus*, which is all white except for a red tip to the wings, and *Catopsilia pyrene*, which is wholly of a light creamy white. The dark brown forms disappeared from the open steppes before seven, and they were followed into obscurity by the light brown *Limnas*, of which not a single specimen could be found during the heat of the day. Then the open 'barra' was tenanted only by white and light coloured species. This rule, however, is not universal, for other factors modify it. Thus in dull cloudy weather the dark-coloured forms fly abroad all day, while some species of rapid flight habitually do so, such as many of the swallow-tail butterflies. *Papilio demoleus*, for example, a common species in the Sabaki and Tana valleys, was met with at all times of day; but it lived mainly under trees, darting out across open places from one shady place to another."

Dr. Gregory is such a good observer that we can only accept the facts he gives, but at the same time I have never *noticed* the correspondence myself when collecting butterflies either in the Malay Peninsula or in South Africa. There is probably here a partial but not absolute rule in the appearance of these insects, and, though I cannot support it from my own experience, it would be most interesting and valuable to obtain the observations and opinions of other tropical field entomologists.

Lord Walsingham in 1885 advocated parallel views on "some probable causes of a tendency to melanic variation in Lepidoptera in high latitudes." In discussing the probable explanation of the white covering of many arctic and alpine mammals and birds, and the dark hue of many lepidopteral species in the same habitats, he accepted the views which were at least enunciated by Craven in 1846 as explanatory of the first phenomenon, which accounts for the same by the well-known fact of white being a bad radiator of solar energy, and white-covered animals thus being able to retain their heat to the greatest advantage. The dark insects, on the contrary, are considered to have their advantage in being better able to absorb the solar radiation.—ED.

MOLLUSCA.

Distribution of Worm-eating Slugs. — As there appeared in the November number of 'The Zoologist' a note regarding the distribution of worm-eating Slugs (*Testacellæ*), it might be interesting to record that these animals are found here, often in considerable numbers. I might mention that here they are chiefly found in the gardens near the sea.—ALEC GOLDNEY HEADLEY (Portchester, Hants).

NOTICES OF NEW BOOKS.

A Handbook to the Game-birds. By W. R. OGILVIE-GRANT.
Vol. II. W. H. Allen & Co. Limited. 1897.

WITH this volume Mr. Ogilvie-Grant completes his task, and describes the remaining species of the order Gallinæ or True Game-birds, as well as that curious and aberrant form the Hoatzin, and the Bustard Quails; in fact, as Dr. Bowdler Sharpe, the editor, remarks:—"His volumes contain the names of every species of Game-birds known up to the present date, so that they may be considered in the light of a small monograph of the Gallinæ."

In these days, when so much popular Natural History is written,—so to say,—secondhand, we do not always find the author an admitted specialist on his subject as is the case with the writer of these volumes; nor do we usually obtain such exhaustive treatment as has been devoted to them. Consequently we have in this 'Hand-book to the Game-birds,' not only a complete enumeration and description of the species, but also a nomenclature revised to date, and this, to working naturalists who are not specially ornithologists, is a considerable boon. Another welcome feature is to be found in the copious extracts given from the published writings of field naturalists and observers as to the life-habits of the species, and here we would fain have wished that bibliographical references might have been added to the same. These descriptive narratives give a life and colour to the monograph. We leave the mere skin with the description, and are then transported to bird-life in many climes and under the guidance of competent and accurate observers. In the years to come, when some zoological Gibbon shall devote his life to the composition of an exhaustive history of animal existence, the scattered field-notes now in many languages, often buried in little known or less read books, and frequently published in non-scientific journals, will perhaps be brought together, and such a work may be expected

to inspire the conclusions of another Darwin. We want more recorders before we can anticipate new prophets.

It is impossible, with regard to space, to give many extracts. The author narrates one experience of the destruction of Pheasants' eggs by Crows. In a Scotch plantation, where thousands of Pheasants are annually reared and turned down, and in a slippery path along the sea-coast, "we found several sucked Pheasant's eggs, evidently the work of Crows, nor had we gone far before we came suddenly upon a whole family of Hooded Crows, five young and two old birds. In the course of about a quarter of a mile we counted over a hundred empty shells which had evidently been carried to the path and there devoured. How many more might have been discovered had we searched it is impossible to say, but we saw ample evidence of the wholesale destruction which a family of Crows is capable of committing among Pheasants' eggs."

To those interested in the discussion as to hereditary transmission of ideas and experience, a fact related of the Grey Peacock Pheasant, *Polyplecton chinquis*, a bird inhabiting the Indo-Chinese countries, will not be unacceptable. "We are told that when the young of this species were first hatched in the Zoological Gardens, a Bantam Hen was employed as a foster mother, and that the chicks *would* follow close behind her, never coming in front to take food, so that, in scratching the ground, she frequently struck them with her feet. The reason for the young keeping in her rear was not understood until, on a subsequent occasion, two chicks were reared by a hen *P. chinquis*, when it was observed that they always kept in the same manner close behind the mother, who held her tail widely spread, thus completely covering them, and there they continually remained out of sight, only running forward when called by the hen to pick up some food she had found, and then immediately retreating to their shelter."

A question in nomenclature seems to be raised by the name *Megapodius Layardi*, Tristran, 1879. In 1869 Mr. Sclater had for the same bird proposed the name *M. brazieri*, "*founded on an egg from Banks I.*" Mr. Ogilvie-Grant is probably quite canonical in adopting the later description made from the bird itself. Would the same law apply to the description of a lepidod-

pteron founded on a caterpillar? The answer would almost certainly be in the affirmative now, but posterity might reverse the verdict!

Sixteenth Annual Report of the United States Geological Survey.
1894-95. By C. D. WALCOTT, Director. Washington. 1896.

THIS bulky volume is another instance of how science is fostered in the United States, and is the first report made by Mr. Walcott, who succeeded Mr. Powell in 1894, after that gentleman had directed the survey for thirteen years. We wish the present editor equal success and increased longevity.

With the geological contents of the volume we have nothing to do in the pages of this magazine, but zoologists may well consult and study an exhaustive memoir, by Prof. O. C. Marsh, on "The Dinosaurs of North America." As the author writes, among the many extinct animals that lived in North America in past ages, "none were more remarkable than the dinosaurian reptiles which were so abundant during Mesozoic times. This group was then represented by many and various forms, including among them the largest land animals known, and some, also, very diminutive. In shape and structure, moreover, they showed great variety, and in many other respects they were among the most wonderful creatures yet discovered."

It is stated that the best authorities now regard the dinosaurs as constituting a distinct subclass of the Reptilia, and Prof. Marsh recognizes three groups, viz. *Theropoda*, carnivorous forms; and *Sauropoda* and *Predentata*, both herbivorous groups. "The first of these suborders contains large dinosaurs more or less protected by a dermal covering of bony plates; the second group includes the huge horned dinosaurs; and the third is made up of the forms that in shape and structure most nearly resemble birds."

While the geological range of the Dinosauria, according to present knowledge, is confined entirely to the Mesozoic period, known so well as the Age of Reptiles, their geographical distribution was extensive. America, Europe, Asia, Africa, and Australia, have all contributed remains of these animals, but "while North America seems to have contained the greatest number of different types, some of the larger species are now known to have

lived in the southern half of the continent. Europe stands next to America in variety and number of these reptiles, large and small."

One interesting point with these animals is their relation to the so-called "bird-tracks" of the Connecticut River sandstone, which have been a "fruitful subject of discussion for half a century or more," and Prof. Marsh considers it now evident "that a dinosaurian reptile like *Anchisaurus* and its near allies must have made footprints very similar to, if not identical with, the 'bird-tracks' of this horizon." No zoologist can fail to find the most absorbing interest in these gigantic and peculiar reptiles, as, for instance, *Atlantosaurus immanis*, of which "the femur is over 6 feet long, and this, with other portions of the skeleton, indicates an animal about 70 or 80 feet in length," or *Laosaurus consors*, estimated as having a height of about 4 feet, with 8 feet in length. It is considered "that the animal was bipedal in its usual locomotion on land," and when walking upright it "seems probable that the animal would touch the ground with its tail; but this is by no means certain."

We have only alluded to matters of general interest in this memoir, which is worthy of study by the zoologist, and is of the greatest importance to the evolutionist. The structural details are fully described, and eighty-five plates are given in illustration of the remains of these vanished creatures.

The Fauna of British India, including Ceylon and Burma: Moths.
Vol. IV. By Sir G. F. HAMPSON, Bart. Taylor & Francis.
1896.

"WITH the present volume the first group of Indian Invertebrata included in the present series is completed." The magnitude of the work is shown by the fact that the four volumes of Moths, with the appendix to the last volume, contain descriptions of 5618 species regarded as valid, exclusive of races or subspecies.

These introductory remarks of Mr. W. T. Blanford, the editor of the series, are necessary to appreciate this colossal monograph, of which the volume under notice comprises only a fourth and concluding part. It is but a few years back when

the Moths of India were in the present position of the Moths of Africa, the game of happy hunting grounds for specialists, but a hopeless study for the average lepidopterist. The material was comparatively scanty, with a systematic literature obscure, scattered, and surcharged with synonymy. Without access to a large and well arranged collection, it was hopeless to attempt even much generic subdivision, save in the largest or best known groups of Moths. Hence much work was necessarily of an empirical description, and many of the "difficult" groups remained outside the nomenclature. This is now no longer the case; with these volumes a student of Oriental Heterocera should not find much difficulty in understanding his subject or naming his species. Each genus is illustrated by a typical species, of which one half exhibits the venation, while the other recorded species are also described.

The author has pursued a synthetic method in his work, but on the merits of "splitting," or "lumping," the pages of 'The Zoologist' contain no mention. We merely record the completion of a great and successful undertaking; and when it is remembered that the first volume only appeared in 1892, the industry alone displayed is something phenomenal.

Zoologisches Adressbuch. R. FRIEDLÄNDER & SOHN. Berlin. 1895.

THIS 'International Zoologists' Directory,' edited and published by the well-known Berlin firm whose catalogues are always appreciated by scientific workers, will prove a welcome addition to the bookshelf. In these days when zoological work is carried on by so many widely separated students, it is a boon to readily acquire the address of those with whom we wish to correspond. It is equally important to discover the names of those who in far-away localities are interested in the same studies as ourselves, and may be expected to join in mutual assistance. Taken in conjunction with 'The Scientists' International Directory,' compiled by Cassino and published in Boston in 1892, a mass of information is available which will save much time in these busy days, and serve to increase—where necessary—the number of our correspondents.

EDITORIAL GLEANINGS.

WITH the object of clearing up certain doubtful points as to the relation of Palæolithic Man to the glacial epoch, a Committee, under the presidency of Sir John Evans, was appointed at the Ipswich meeting of the British Association in 1895. Its report, drawn up by the Secretary, Mr. Clement Reid, was presented to the Liverpool Meeting of the British Association, 1896.

Work was commenced at Hoxne. A pit was sunk to a depth of 20 feet, and a boring continued 22 feet lower, when the glacial sand (underlying the boulder clay) was reached. This represented a depth of about 51 feet from the surface which existed before the brickyard was worked in which the investigations were made. A chain of borings east and west of this trial pit was also effected.

Mr. T. V. Holmes, in summarising this report in the pages of the 'Essex Naturalist,' writes:—"The explorers think that long after the disappearance of the ice which deposited the chalky boulder clay (the latest glacial deposit of East Anglia) the land was somewhat higher than at present, so that the silted-up channel could be excavated to a depth slightly greater than that of the present channel of the Waveney. Then gradual subsidence turned this channel into a shallow fresh-water lake. After the lake became silted up it was grown over by a temperate flora. Then lacustrine conditions again prevailed, and a colder climate, resulting in the deposition of bed C (black loam with leaves of arctic plants). Then followed the floods, during which the palæolithic beds B (gravel and carbonaceous loam) (no implements at this spot) and A (brick-earth with fresh-water shells, wood, and palæolithic implements) were deposited. The palæolithic deposits at Hoxne are therefore, as Mr. Reid remarks, not only later than the boulder clay of East Anglia, but are separated from it by two climatic waves, with corresponding changes of the flora."

At the January meeting of the Zoological Society of London, Mr. Sclater exhibited a photograph of a young Anteater, *Myrmecophaga jubata*, two days' old, born in the Zoological Garden of Herr Adolf Nill, at Stuttgart. Mr. Sclater remarked that this was the first instance, so far as he knew, of this animal having bred in captivity.

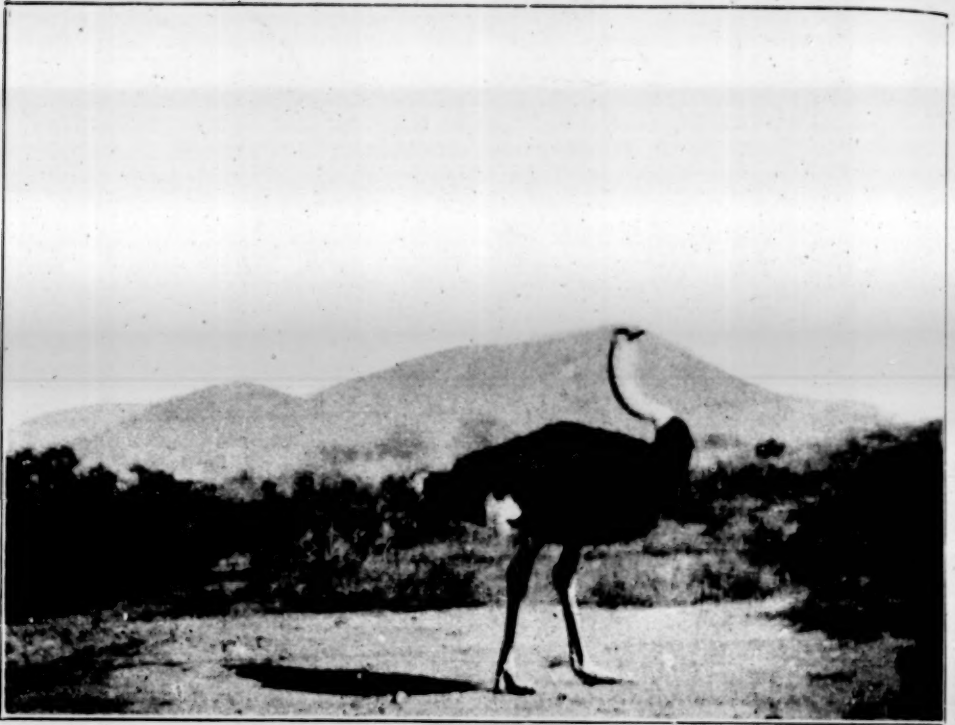
At a meeting of the Linnean Society of London held Dec. 17th, Mr. J. E. Harting exhibited a supposed hybrid between the Common Brown Hare,

Lepus timidus, and the Irish Hare, *L. variabilis*, recently obtained in Carnarvonshire, where the latter species had been introduced in 1878. He compared the specimen in question with examples of both the above-named species, and contrasted their distinguishing peculiarities, pointing out the intermediate characters exhibited by the supposed hybrid. His remarks were criticised by the President (Dr. A. Günther), who thought that too much stress should not be laid upon external appearance and colour; that the question of hybridity should rather be determined by comparing the relative measurements of the leg-bones; and that the Irish Hare should be compared in detail with the Hare of Southern Europe, *L. meridionalis* or *mediterraneus*. Prof. Howes drew attention to Nathusius's observations upon the Peyer's patches of the Leporines, and pointed to the necessity for examination of the viscera. Mr. Barrett Hamilton, who was present as a visitor, was inclined to regard the supposed hybrid as an example of the ordinary Brown Hare turning white in winter, hitherto unnoticed in this country. Mr. Thomas Christy enquired what position the so-called Belgian Hare or Leporine occupied in relation to the question of hybridity; and was answered that the popular notion of that animal being a hybrid between Hare and Rabbit was fallacious, since it was nothing more than an overgrown tame Rabbit coloured like a Hare.

The 'Daily News' of Jan. 27th gives a forecast of the Commissioners' Report on the Behring Sea Seal Fisheries, from which we extract the following particulars:—Mr. Gerald Barrett Hamilton, one of the two British Commissioners, returned recently to London, having been preceded by Prof. D'Arcy Thompson. After spending six weeks on the Commander Islands and visiting Robben Island, Mr. Hamilton joined Prof. Thompson on the Pribyloff, and remained until the end of October. The Canadian and United States Commissioners, Messrs. McCoun and Clarke, were also on the Pribyloffs at the time. Owing to the powers given to the American Commissioners by their Government, they were able to do more than had been previously accomplished in the study of the question. Among other things a census—the first ever made—of every Seal on the islands was taken. This showed that there were 143,000 breeding females on the Pribyloffs, and proved that the American estimates of the total number of Seals on the islands were much below the mark. Another important piece of work was the counting of dead pups. The Americans claimed that, owing to the killing at sea of breeding females, vast numbers of pups were left to starve on the islands. They claimed that as many as 30,000 perished in this way. It was therefore highly important to know actually how many dead pups there were. Twenty thousand dead pups were counted, but it was proved that 10,000 of these had been killed by overcrowding before the commencement of pelagic sealing. The remaining 10,000 had died later in the season.







Vicious Ostrich Cock "bromming"—at end of third note of cry (p. 105).



Vicious Ostrich Cock "rolling" (p. 104).

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